

Field Notes Nov. 15, 2000
Chenier Plain Sediment Burial Pipe Measurements

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Equipment: Field notebook and pens, quadrangle maps, make-shift measuring stick (see "Lock" section), 35mm camera with telephoto lens (Huh), and the digital camera with zoom lens from CIMSS (Moeller, Gunshor). The meter stick was actually a wooden broomstick or mop handle obtained from the U.S. Army Corps of Engineers employee stationed at the lock near the boat launch. Using a red marker and measuring tape, Chris marked off feet and inches on the stick. For distances longer than the measuring stick we assumed the pipes were approximately 30m apart and judged distances based upon that estimate. We did not have a GPS device on this trip so latitude/longitude locations listed here are from the September 1997 trip. Future equipment suggestions: Sechi disk, echosounder, fathometer, small binoculars for finding pipes inshore, a long firm measuring device (longer than a meter or yard stick, if possible), a GPS device, replacement clamps, and blue and orange (perhaps red would be better) spray paint for remarking the pipes where necessary. We should also bring a measuring tape or something else (rope?) that we could use to measure the distance between adjacent pipes. Finally, red reflective tape for additional marking of pipes.

Weather: Cool (upper 50's), overcast (mid level), and relatively dry. There were light (7-10 mph) easterly winds when we started out, progressing to southeasterly in the afternoon and picking up (10-12? mph) in the afternoon. Seas were fairly calm and did not prevent us from visiting any of the pipes. We were somewhat concerned most of the trip that we needed to be fast since winds were expected to increase from the southeast in a prefrontal mode in the afternoon. There had been a cold frontal passage about 36 hrs previous. In the end, the afternoon winds did not become a hindrance.

Dock

10:20am CST

Notes: Loaded and launched airboat from a side inlet of Freshwater Bayou Canal. Freshwater Bayou is now referred to as Freshwater City. Headed out of Freshwater Bayou Outlet into the Gulf and turned west alongshore toward the Western Erosion Site.

Lock

10:30am CST

Notes: When loading the boat we discovered that we forgot a measuring stick. We stopped at the lock to ask the man (Greg or Craig?) working there if he had something. We ended up using a long (about 5') wooden broom stick or mop handle, which Chris marked off with a red marker using measuring tape. We left the lock at 10:38am CST.

Western Erosion Site (WES)

11:08am CST

- Pipe #3 WES #3 3rd pipe in (shoreward) from the south at WES.

29°33.894' N 92°29.698' W

Measurements:

From water level to surface of sedimentation: 26 in

From clamp to water level: 72 in

Description: Pipe standing in about 2' of water. The subaqueous bottom was described as being hard or solid at this point. While tied to the pipe we estimated that it was approximately 30 to 40 yards from the pipe to the sand ridgeline. There were clumps of grass in the mud. The mud onshore appeared very firm and was heavily pocked or tunneled (1-2" diameter). It gave the appearance of a lava field to Chris. We later conjectured that the tunnels were the pathways of former root systems of vegetation which had since been eroded away.

Note: Pipe WES#3 is almost certainly the pipe that Huh et al placed at the shell beach ridge line in 1994. Through eroding forces, it now is about 30-40 yards seaward of the beach ridge and stands some 8 – 10' above the water line (i.e. much of the pipe that was once submerged in the shell beach ridge is now exposed by erosion.) – ed.

Pictures:



1. Oscar displaying our make-shift measuring stick. (Dscn0004.jpg)



2. Firm mud ridge at Western Erosion Site. Note pockmarked surface, possible remnant pathways of vegetation root systems. Erosional forces seem to be cutting the beach and stranding the vegetation. (Dscn0005.jpg)



3. Sand Ridge beyond pock-marked mud shoreline at WES. Sediment burial pipe positions suggest that the beach ridge has eroded back since 1994. (Dscn0006.jpg)

- Pipe #2 WES #2 2nd pipe in (shoreward) from the south at WES.

Measurements:

From water level to surface of sedimentation: 32 in

From water level to clamp: 4 ft 6 in

Description: Pipe standing in about 2.5' of water. The subaqueous bottom here was described as firm and wet. An outer clamp on this pipe has broken loose from rust, exposing an inner clamp that is itself severely rusted (as well as the pipe).

Pictures:



4. Pipe at WES #2. Note broken outer clamp hanging on pipe and exposing severely rusted inner clamp about 3 inches above. (Dscn0007.jpg)

- Pipe #1 WES #1 Southernmost pipe at WES.

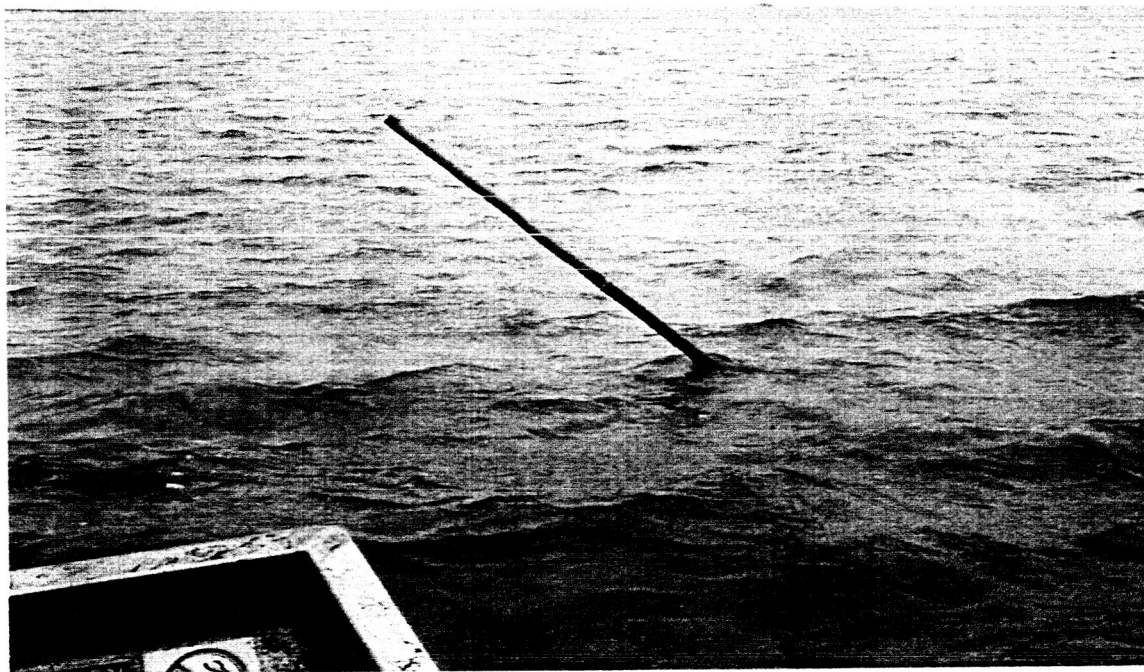
29°33.813' N 92°29.640' W

Measurements:

From water level to surface of sedimentation: 3 ft 6 in

Description: This pipe is bent at about a 45-degree angle (was not bent in Sept 1997). Due to this fact we were unable to make a meaningful measurement from the clamp.

Pictures:



5. Bent pipe at WES #1 some 50 meters or more offshore. This pipe was vertical in Sept 1997. A measurement from the surface of sedimentation to the approximate water level at the pipe was recorded. Note light seas. (Dscn0008.jpg)

Notes: Chris roughly estimated the shell beach extended about ½ mile eastward from WES. Pipes are numbered so the #1 pipe is the farthest south - in this case, the farthest out into the gulf since they are in water. We visited the #3 first, then #2, followed by #1 last. We left this site and headed eastward to the Dewitt Canal Site.

Dewitt Canal Site (DCS)

11:39am CST

5 pipes seen at this site, 4 were visited. We also saw the red and white triangle marker installed inland by Rouse in 1994.

- Pipe #1 DCS #1 Southernmost pipe (farthest toward the Gulf)

29°33.357' N 92°26.454' W

Measurements:

From clamp down to the surface of sedimentation: 6 ft

From clamp up to the top of the sediment pipe: 27 in

Description: The surface was fluid mud here which looks eroded and pocked. There were bird prints in the mud near the pipe. Mud flat extends approximately 20m south from this pipe. This pipe was not painted in Sep. 1997.

Pictures:



6. Looking North from DCS#1. DCS#2, #3, & #4 clearly visible in background.
(Dscn0010.jpg)



7. Chris measuring at DCS#1. The broomstick is sitting on the mud surface at the base of the pipe and the total distance to the clamp on the pipe (visible at the very top of picture) is being measured. Note puddling of surface water. The area immediately at the base of the pipes tended to be a bowl shaped depression, often several inches deep. Water level appeared to be quite low, and was observed rising later in the day. (Dscn0138.jpg)



8. Chris completing the measurement to the clamp on DCS#1. The total distance in feet and inches from the surface of sedimentation to the clamp was recorded by Mat. The measuring process was generally completed within 1 minute. Error bars for this measurement procedure are estimated to be about $\pm 1/2$ to 1 inch. For some pipes, the distance from the upper clamp to the top of the pipe was also measured and recorded to complete a documentation process begun with the Sept 1997 field trip. (Dscn0139.jpg)

- Pipe #2 DCS #2

Measurements:

From upper clamp down to the surface of sedimentation: 4ft 8in
 From upper clamp up to the top of the sediment pipe: 5ft
 From upper clamp to lower clamp: 3ft 10in

Description: The surface was fluid mud here. Here at 11:54am. This pipe was not painted in Sep. 1997.

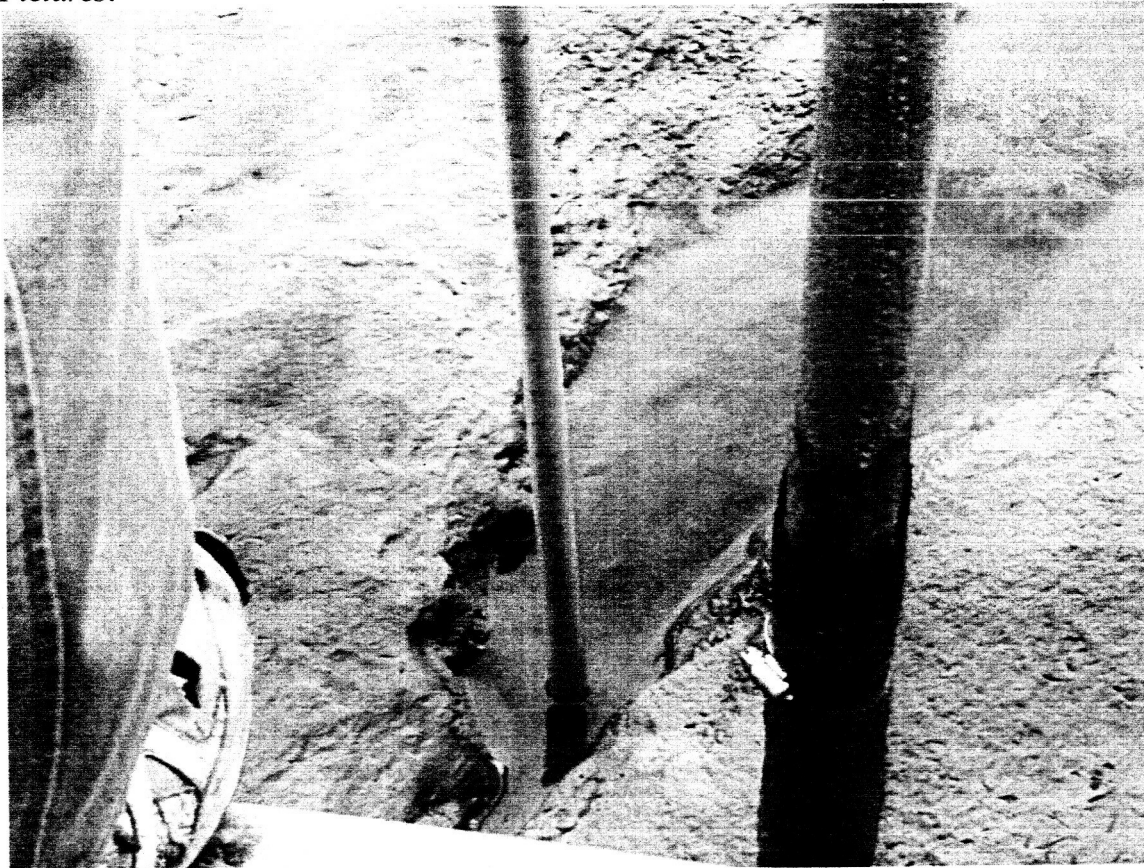
- Pipe #3 DCS #3

Measurements:

From upper (?) clamp down to the surface of sedimentation: 5ft 2in

Description: We're assuming this measurement is from the upper clamp if there was more than one clamp since it was the only clamp visible. There were 6-10in deep shore normal rills here. This pipe is approximately 20m from the mud edge (or mud "escarpment"). Oscar described the mud surface here as "hummocky."

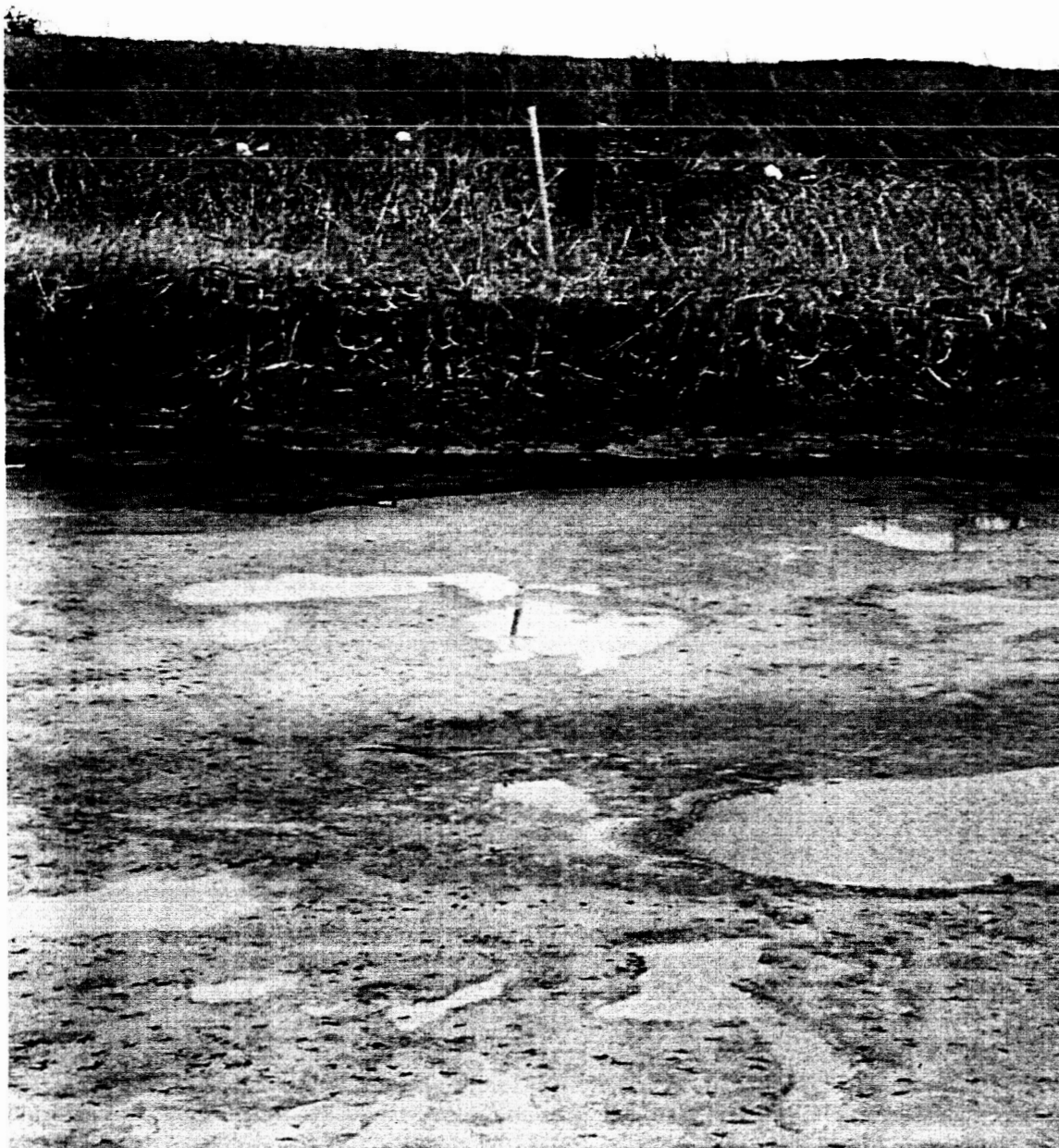
Pictures:



9. One of many shore normal rills, this one about 6" deep. This is pipe DCS#3.
(Dscn0140.jpg)



10. Facing seaward from DCS#3, DCS#2 and DCS#1 visible in the background, as well as several oil platforms. Significant puddling at DeWitt Canal site is evident. Oil platforms in background. (Dscn0141.jpg)



11. Facing shoreward from DCS#3, DCS#4 visible above escarpment just north (2 meters) of the edge of vegetation which reaches to the escarpment. A fifth pipe (DCS#5) is barely evident in the photo just at the edge of the taller vegetation in the background. The line between DCS#4 and DCS#5 is a former fence line. The

vegetation on the escarpment was severely matted for about 20 meters, suggesting overwash during a high water event. (Dscn0142.jpg)

- Pipe #4 DCS #4

Measurements:

From clamp down to the surface of sedimentation: 2ft 8in

From clamp up to the top of the sediment pipe: 1ft 7in

Description: This pipe was not painted in Sep. 1997. Pipe is about 10m north of the mud escarpment. The surface here was firm mud with grass. We debarked from the airboat to make these measurements and were able to walk easily. Much of the grass here looked to be flattened, we assumed by some high water event. The thick areas of grass were difficult to walk on.

Pictures:



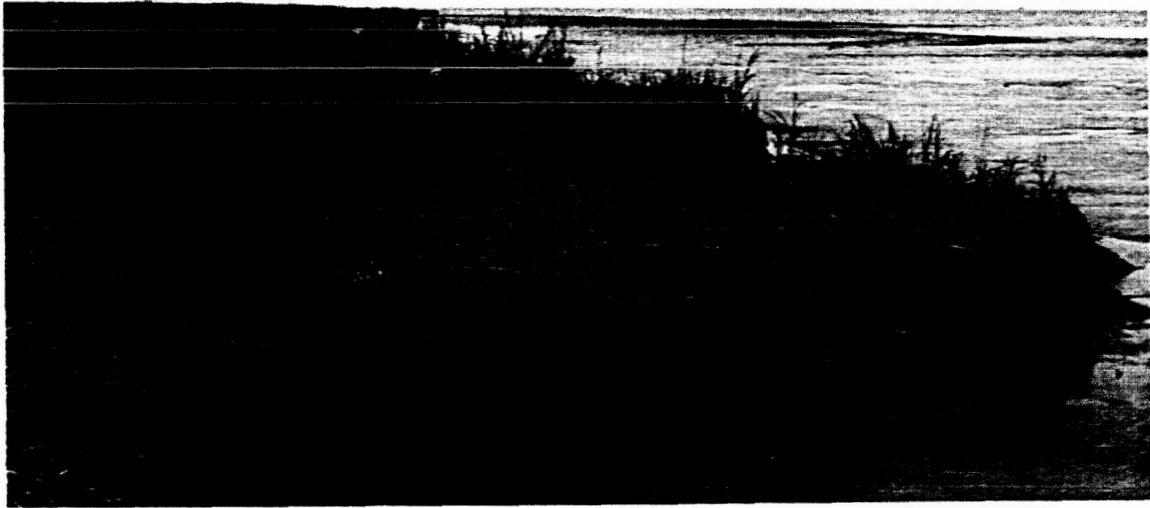
12. Seaward from DCS#4. DCS#1-3 are resting in exposed fluid mud. The exposed mud flat (water edge to escarpment) was estimated at about 100m at this time, based in part on an assumption that the sediment pipes were placed at 30m spacing. (Dscn0143.jpg)



13. Oscar walking northward on large log near fence line between DCS#4 and DCS#5, which is visible near the edge of the matted vegetation. Note some trash (left side) is also present at extent of matted vegetation. (Dscn0144.jpg)



14. Mat measuring mud escarpment, about 2' high near DCS#4. The escarpment appears to be a purely erosional feature. (Dscn0145.jpg)



15. Eastward from DCS#4 alongshore showing escarpment extending for some distance.
Mat providing scale. (Dscn0146.jpg)



16. From DCS#4. Airboat parked at escarpment. Time for a lunch break. (Dscn0148.jpg)

Notes: There was a mud flat about 100m long extending seaward from a mud escarpment at this site. At the base of pipes there often were 6" or so diameter bowls (2-3" deep below the surrounding surface of sedimentation) that were scoured out. We measured the mud escarpment to be about 2 feet high from the surface of the mud flat. From DCS#4 we could see a fifth pipe to the north and Oscar made his way through the thick grass to see it but made a hasty retreat from the mosquitoes. We saw a fence here that starts between pipes 4 and 5 and extends northward. There was also a long log, which was approximately 3-4 feet in diameter and lying next to the fence oriented north/south. The grass here was flattened northward for 20m inland from the escarpment and the grass was colonized all the way to the edge of the escarpment. There was trash on the flattened grass. We could see the triangle that Larry Rouse put here about 200m north of the escarpment.

After exploring this area we ate lunch here in the boat at 12:30pm CST. Then we continued east alongshore toward the Exxon Canal West Site.

Exxon Canal West Site (ECW)

1:05pm CST

Dale called the pipeline here the Transco pipeline. Transco is now Williams so maybe a more appropriate name is the Williams Pipeline. He said that as an area dries up the big

oil companies sell off their sites to little oil companies who then pump them dry. There are 7 pipes at this location, according to Oscar, but we could only see 5 of them, each at regular spacing of about 30m between pipes. The pipes are buried in a straight line extending seaward from a fenceline, which is used for holding grazing cattle. North of the northernmost pipe is an orange/red (reflective?) triangle marker to help locate the site from the sea. Larry Rouse remembers putting it here and we did see it well inland on this day. On this day we measured the southernmost 4 pipes.

Pictures:



16.1 Approaching the Exxon Canal Site pipe array, ECW#2 and ECW#3 visible on fluid mud surface. (Dscn0149.jpg)

- Pipe #1 ECW #1 Southernmost pipe at ECW - farthest from shore.

29°32.605' N 92°23.410' W

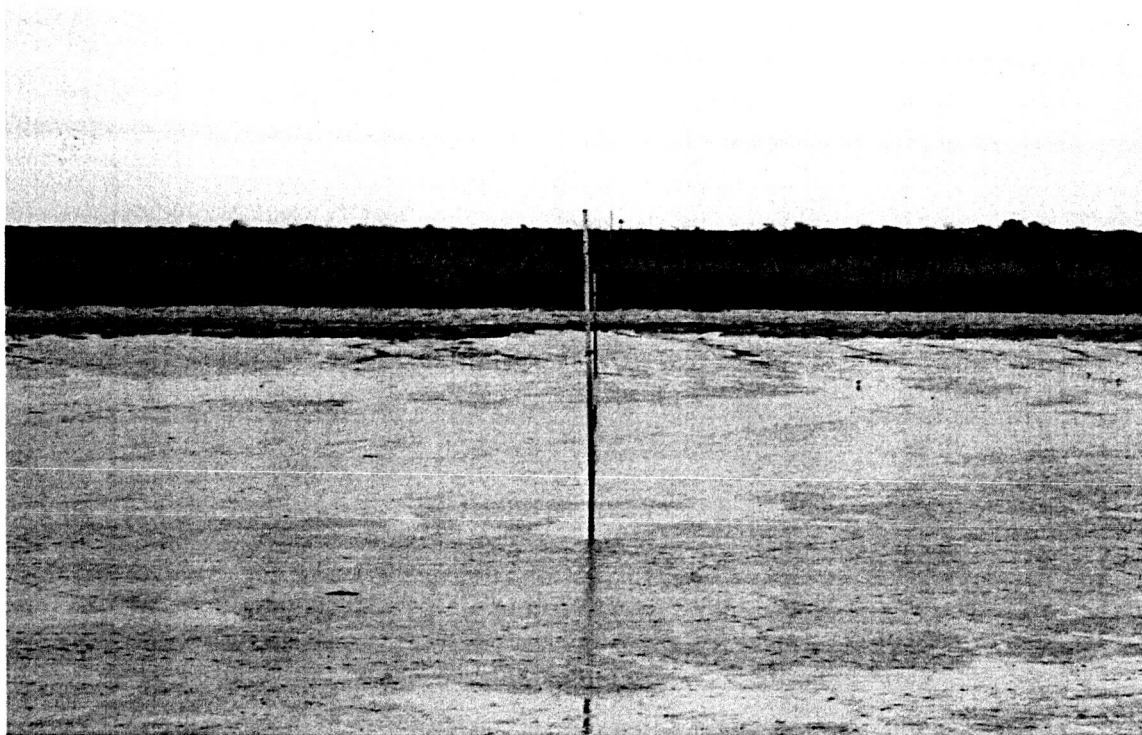
Measurements:

From clamp down to the surface of sedimentation: 4ft 6in

From clamp up to the top of the sediment pipe: 35in

Description: Fluid mud surface. We could see long (> 100m) linear 1-2" tall wavelets rolling in and as the water moved back out it was mostly clear, with little or no sediment in it. It looks like the mud flat (from the grass edge) is about 80-90m here.

Pictures:



16.2 Shoreward from ECW#1, ECW#2 and ECW#3 visible. ECW#5 visible in the vegetation and the triangle is far in the distance. (Dscn0150.jpg)

- Pipe #2 ECW #2 Second pipe shoreward from the Gulf

Measurements:

From clamp down to the surface of sedimentation: 4ft 7in

Description: Noticed that the paint marks from 9/97 were still here, although the blue paint is much more vibrant than the orange. This is pretty much the case at all pipes we visited today.

- Pipe #3 ECW #3 Third pipe shoreward from the Gulf

Measurements:

From clamp down to the surface of sedimentation: 4ft 2in

Pictures:

17. ***Picture 17 (Seaward from ECW#3) came out black (forgot to remove lens cap)***
(Dscn0151.jpg and Dscn0152.jpg)



18. Shoreward from ECW#3. Note mud ridge, about 6-10" tall in foreground. ECW#4 stands about 18" tall on the mud ridge in the center of the photo about 2 meters seaward of the vegetation line. The mud ridge itself is roughly 6-8 meters front to back in the center of this photo. Note: This picture is out of focus and Paint Shop Pro was used to sharpen the image somewhat. (Dscn0153sharp.jpg)

- Pipe #4 ECW #4 Fourth pipe shoreward from the Gulf.

29°32.652' N 92°23.406' W

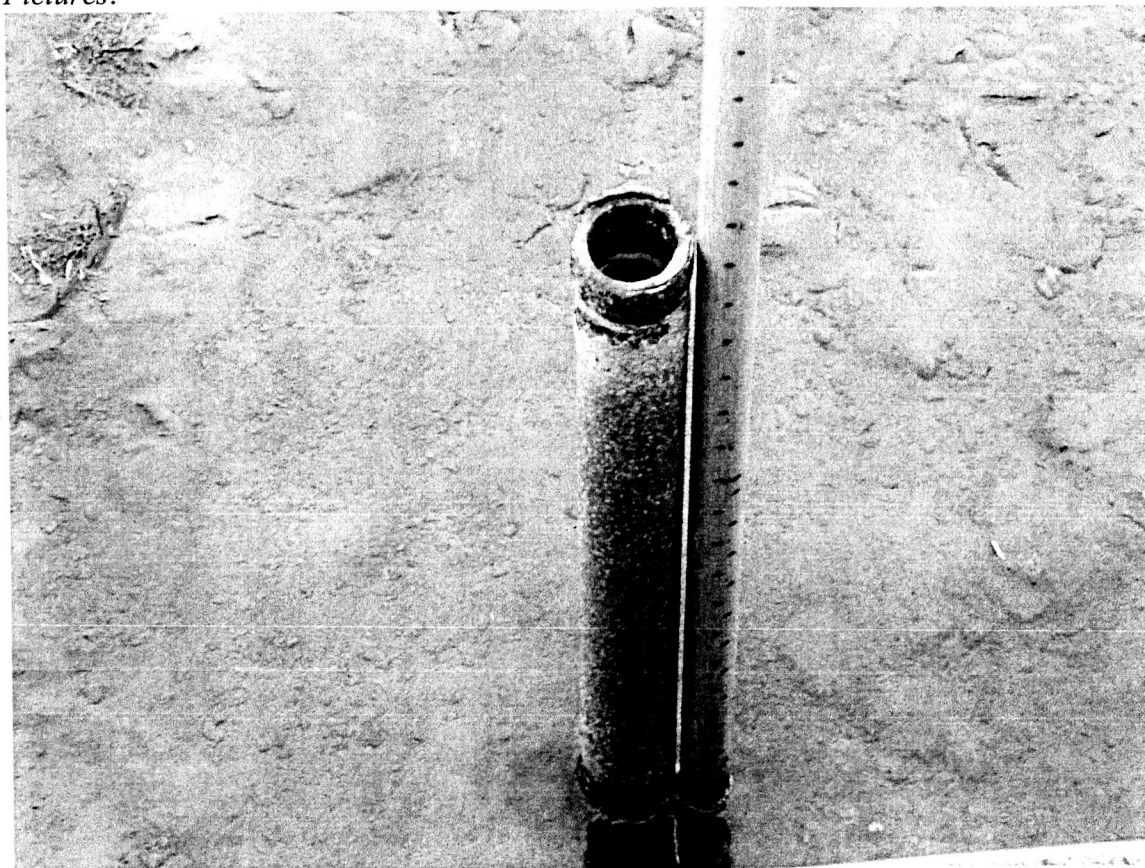
Measurements:

From top of pipe down to the surface of sedimentation: 18in

Description: We were here at about 1:30pm CST. The pipe is sheared off at a former pipe joint low to the ground (18"), probably weakened by rust. The clamp was apparently on the on the missing (upper) part of the pipe as no clamp is now visible on this pipe.

The pipe was about 2-3m seaward of the vegetation line. The surface here has a thin veneer of firmer mud with fluid mud immediately underneath. Chris was able to poke the broomstick through the thin upper veneer, causing fluid mud to ooze to the surface.

Pictures:



19. Measuring ECW#4. An upper section of pipe has apparently corroded and broken off, leaving the visible stem, which in this picture contains water. The clamp on this pipe is presumed to have been on the missing upper section. Henceforth, this pipe will be measured from the top of the pipe to the surface of sedimentation.
(Dscn0154.jpg)



20. Seaward from ECW#4, ECW#3, ECW#2, and ECW#1 visible (fore to background). The water level has risen past ECW#1 and will continue to rise past ECW#2 (see picture 22) in the 45 minutes we spent at ECW site. Notice the tracks left in the mud by the airboat. (Dscn0155.jpg)



21. Shoreward from ECW#4, ECW#5 visible from here through thick vegetation. In Sept. 1997, ECW#5 was just landward (a few meters) of the vegetation line. It now is some 30 meters into thick vegetation. (Dscn0156.jpg)



22. Mud ridge line between ECW#3 and ECW#4; picture taken from ECW#4 and ECW#3, ECW#2 and ECW#1 are visible (fore to background). Notice the left side of the image, a miniature tidal "creek" is evident. (Dscn0158.jpg)

- Pipe #5 ECW #5

Fifth pipe shoreward from the Gulf.

Field Notes 11/15/2000

29°32.677' N 92°23.391' W

Description: This pipe is too deep into thick vegetation for us to reach with the airboat. It's approximately 30m north of the seaward edge of the vegetation.

Notes: There was considerable puddling of water all around the mud flat here. We could tell the tide was coming in at this point and the water rose noticeably between the time we were at ECW#1 and ECW#4. The 80-90m mud flat noted at ECW#1 was no longer 80-90m when we left ECW#4. The small waves, which we called wavelets, were probably a result of the rising tide, though we were not aware of that at the time we saw them at ECW#1. The mud flat seemed to be of two levels as there was a mud ridge between ECW#3 and ECW#4 (the northern section is naturally higher than the southern section). Several tidal "creeks" were evident on the mud flat. From here we traveled east to find the Solitary Pipe Site.

Solitary Pipe Site (SPS)

1:45pm CST

There is just one lone pipe at this site.

- Pipe #1 SPS #1 Only pipe at site.

29°32.290' N 92°21.507' W

Measurements (2 clamps):

From lower clamp to the surface of sedimentation: 2ft 1in

From upper clamp to the surface of sedimentation: 5ft 1in

Description: There was approximately 1in of water here. We described the surface as fluid mud here.

Pictures:



23. Shoreward from SPS#1 (solitary pipe). No mud ridge here; fluid mud flat extends up to the vegetation line. Vegetation is about 4-5 feet tall. (Dscn0159.jpg)

Notes: When we passed this area earlier it was a big mud flat but now the water is coming in and it's already covered in a thin, 1 in, layer of water. There was fluid mud all

the way up to the vegetation. It actually looked like the fluid mud was overtaking the vegetation here (no ridge, escarpment, or anything else marking the seaward edge of the vegetation). It was approximately 35m from the pipe to the vegetation. We had the feeling that the grass was shorter here than at the other sites.

Triple Canal Site (TCS)

1:55pm CST

In September 1997 we could only see 2 pipes here. This trip we found those 2 pipes but also could see a third approximately 200 yards or more north of TCS#2.

- Pipe #1 TCS #1 Southernmost pipe at Triple Canal Site

Measurements:

From clamp down to the surface of sedimentation: 7ft 2in

Description: Water depth was about 8in here. The subaqueous mud bottom was fluid and soft. This pipe appears to be approximately 30m from the vegetation line.

Pictures:



24. Shoreward from TCS#1, TCS#2 visible near the edge of vegetation. Large white advertisement billboard in left background was reputed to be near shoreline when installed years ago. (Dscn0160.jpg)

- Pipe # 2 TCS #2

Second pipe shoreward from the Gulf.

29°32.003' N 92°20.054' W

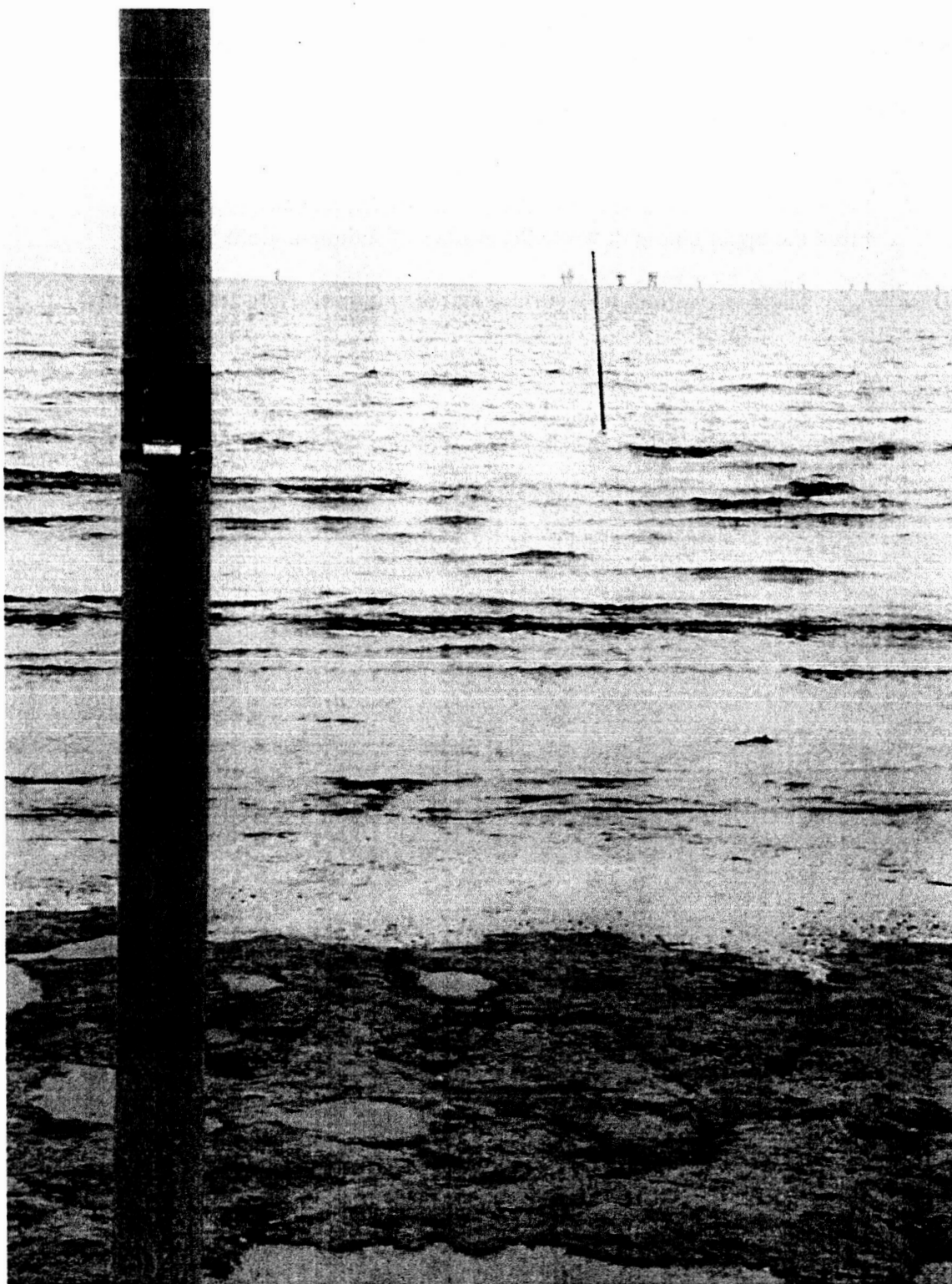
Measurements (2 clamps):

From the lower clamp down to the surface of sedimentation: 1 ft 3 in

From the upper clamp down to the surface of sedimentation: 5 ft 2 in

Description: There was a fluid mud surface and the pipe was right at the edge of vegetation.

Pictures:



25. Seaward from TCS#2, TCS#1 visible in the background. Texture of fluid mud surface at TCS#1 evident in foreground. (Dscn0161.jpg)

Notes: The vegetation here was approximately 4-5 feet high. We were unable to get further in shore but we could see a pipe approximately 200 yards north, inline with the

other pipes. There is a large advertisement sign many hundred yards inland that our boat driver, Dale, said was placed at the shoreline many years ago. We left this site and headed east across Freshwater Bayou Outlet to the Eastern Erosion Site.

Eastern Erosion Site (EES)

2:17pm CST

- Pipe #1 EES #1 Southern-most pipe at EES

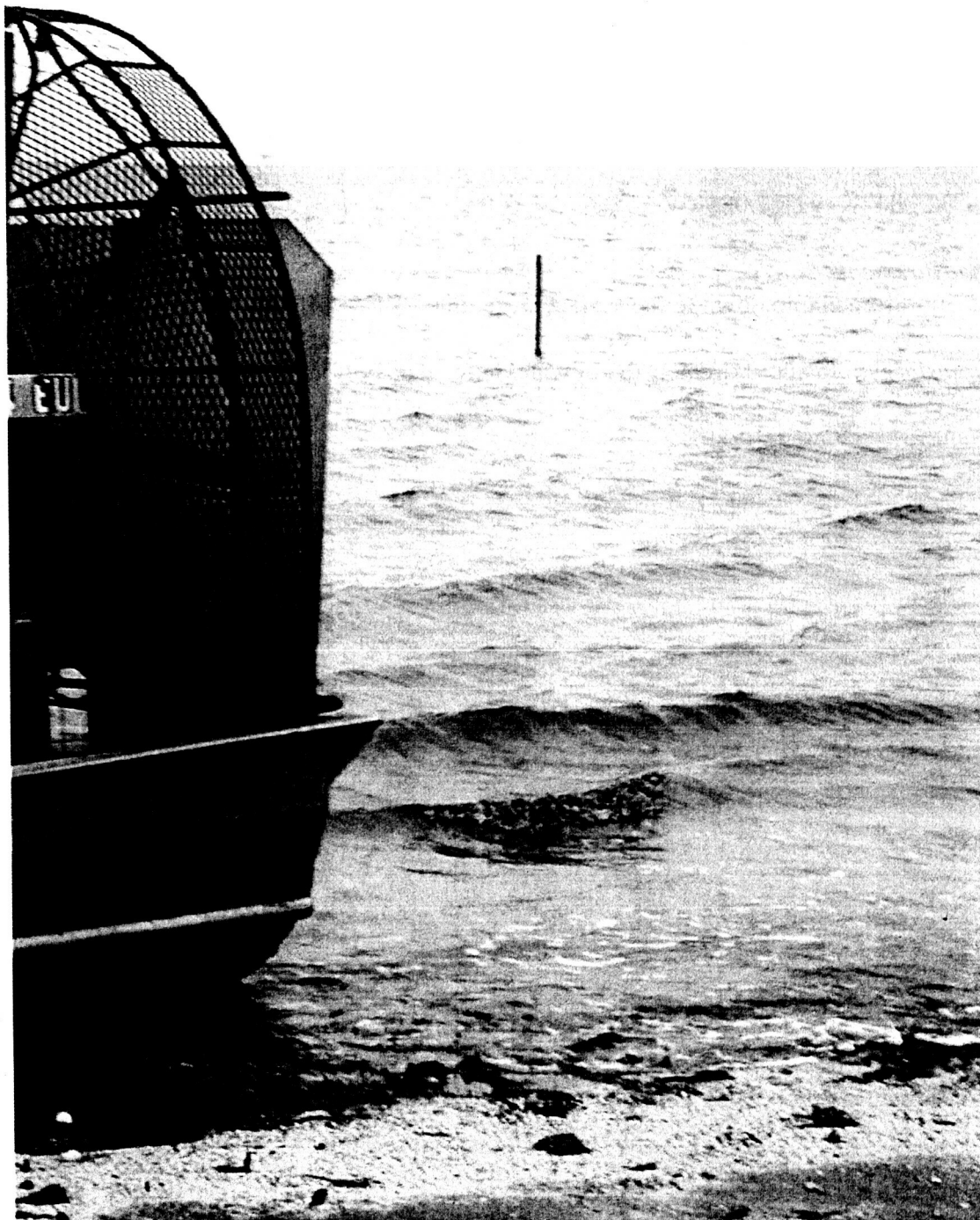
29°32.004' N 92°17.028' W

Measurements:

From clamp down to the surface of sedimentation: 5ft 5in

Description: In approximately 2ft of water here. The bottom was firm mud.

Pictures:



26. Facing pipe from shell beach at Eastern Erosion Site. In 1994, two pipes were installed at this site, reportedly one at shell beach ridge and a 2nd some 25 meters seaward. At this time, there is no evidence of a 2nd pipe at this site. Based on description given in the Nov. 1994 report, it is likely that erosion toppled the shell beach ridge pipe (only sunk about 1 meter into ridge) and that the remaining pipe is the seaward pipe, now some 50 meters from the shell beach ridge. (Dscn0162.jpg)



27. Facing west along beach at EES. No evidence of mud deposits on beach.
(Dscn0163.jpg)



28. Facing inland some 15 meters inland of shell beach ridge at EES. Mat is standing on a shell beach overwash lobe. The grassy lowland region beyond contained some standing water. In the background is a chenier populated by Oak trees.
(Dscn0164.jpg)



29. Shell beach overwash lobes, taken from Mat's position in picture 28, facing North.
(Dscn0165.jpg)



30. A series of shell beach overwash lobes, taken from Mat's position in picture 28 facing East. (Dscn0166.jpg)



31. The crew of salty dogs (minus Chris)! (Dscn0167.jpg)

Notes: When we were here in September 1997 Oscar believed there might have been 2 pipes here and that the second one was hidden north in tall grass. We were able to walk around this site pretty easily and did not see any signs of there being another pipe here; however notes from November 1994 state that two pipes were put in and were close together. It is reasonable to conclude that one of two pipes (which one?) is now missing. There is a shell beach ridge here approximately 15m from shore and 40m from the pipe (i.e. about 55m from pipe to shell beach ridge). There is evidence that at some point the water level reached that shell ridge and washed over it because there are shell lobes that extend northward from the ridge. The pictures do not convey as well the motion that could be seen in person from where this wash over took place. Some of these lobes extend approximately 30m north from the shell beach ridge. The vegetation here was not so thick as to prevent us from moving around on the beach easily. Approximately 30ft west of where Mat is standing in picture 28 there is standing water in the lowland area north of the shell beach ridge. There was no evidence of any mud deposits on the shell beach.

There were mosquitoes here too. We lost the lens cap to the digital camera but right before we got back into the boat Dale spotted it on the beach a few feet from his boat. We left this site and sped back to the boat launch, already thinking about getting warm.

Dock

2:40pm CST

29°33.048' N 92°18.555' W

Notes: All latitude/longitude information in this report is transcribed from the September 16, 1997 field trip. Boat launch site (i.e. Dock) was the same as in Sept. 1997. Here we unloaded our equipment and supplies from the boat and packed up Oscar's SUV. We left the marvelous broomstick measuring device with Dale to return to the Lock. The mosquitoes in the grass near the launch welcomed us back heartily and we spent several minutes in the car repaying their kindness. When we left the area we drove west for a while looking at the map to see if there was anything of interest to visit. After driving for an hour or so we decided there weren't roads to any of the interesting geological features here and so we headed back northeast toward Lafayette. At about 5:00pm CST we stopped in Breaux Bridge for the now-traditional dinner and beer (or Sprite) at Mulate's.

Notes:

EES = Eastern Erosion Site

WES = Western Erosion Site

DCS = Dewitt Canal Site

ECW = Exxon Canal West

SPS = Solitary Pipe Site

TCS = Triple Canal Site

Sediment Burial Pipe Measurements at a Glance November 15, 2000

Site	Measurement Description	Measurement Inches	Measurement cm
WES #1	Water Level to SoS	42	107
WES #2	Clamp to SoS	86	218
WES #3	Clamp to SoS	98	249
DCS #1	Clamp to SoS	72	183
DCS #2	Upper Clamp to SoS	56	142
DCS #3	Clamp to SoS	62	157
DCS #4	Clamp to SoS	32	81
ECW #1	Clamp to SoS	54	137
ECW #2	Clamp to SoS	55	140
ECW #3	Clamp to SoS	50	127
ECW #4	Top of pipe to SoS	18	46
SPS #1	Upper Clamp to SoS	61	155
TCS #1	Clamp to SoS	86	218
TCS #2	Upper Clamp to SoS	62	157
EES #1	Clamp to SoS	65	165

SoS – Surface of Sedimentation